

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listing, of claims in the application:

1-61. (canceled)

62. (new) A G-CSF analog having hematopoietic activity comprising an internal core of helices A, B, C and D and external loops as set forth in FIG. 4 and an amino acid sequence, wherein the amino acid sequence differs from that of SEQ ID NO:2 in that

- a) lysine residues at positions 17, 35 and 41 are substituted with arginine;
- b) at least one external loop is altered to include one or more lysines containing at least one PEG; and

wherein, an N-terminal methionine as set forth in SEQ ID NO:2 is optional.

63. (new) The G-CSF analog of claim 62 wherein the external loop is AB.

64. (new) The G-CSF analog of claim 62 wherein the external loops are AB and CD.

65. (new) The G-CSF analog of claim 62 wherein the external loops are AB, BC and CD.

66. (new) A G-CSF analog having hematopoietic activity comprising an internal core of helices A, B, C and D and external loops as set forth in FIG. 4 and an amino acid sequence, wherein the amino acid sequence differs from that of SEQ ID NO:2 in that

- a) lysine residues at positions 17, 35 and 41 are substituted with arginine;
- b) at least one external loop is altered to include one or more lysines containing at least one PEG; and
- c) at least one internal core  $\alpha$ -helix is altered to include one or more lysine residues containing at least one PEG, wherein the altered amino acid sequence is not essential for structural integrity, and

wherein, an N-terminal methionine as set forth in SEQ ID NO:2 is optional.

67. (new) The G-CSF analog of claim 66 wherein the internal core helix is helix A.

68. (new) The G-CSF analog of claim 66 wherein the internal core helix is helix B.
69. (new) The G-CSF analog of claim 66 wherein the internal core helix is helix C.
70. (new) The G-CSF analog of claim 66 wherein the internal core helix is helix D.
71. (new) The G-CSF analog of claim 66 wherein the internal core helices are helix A and B.
72. (new) The G-CSF analog of claim 66 wherein the internal core helices are helix B and C.
73. (new) The G-CSF analog of claim 66 wherein the internal core helices are helix C and D.
74. (new) The G-CSF analog of claim 66 wherein the internal core helices are helix B, C and D.
75. (new) A G-CSF analog having hematopoietic activity comprising an internal core of helices A, B, C and D and external loops as set forth in FIG. 4 and an amino acid sequence, wherein the amino acid sequence differs from that of SEQ ID NO:2 in that
- a) lysine residues at positions 17, 35 and 41 are substituted with arginine; and
  - b) at least one internal core  $\alpha$ -helix amino acid sequence is altered to include one or more lysine residues containing at least one PEG, wherein the altered amino acid sequence is not essential for structural integrity and
- wherein, an N-terminal methionine as set forth in SEQ ID NO:2 is optional.
76. (new) A G-CSF analog having hematopoietic activity comprising an internal core of helices A, B, C and D and external loops as set forth in FIG. 4 and an amino acid sequence, wherein the amino acid sequence differs from that of SEQ ID NO:2 in that
- a) lysine residues at positions 17, 35 and 41 are substituted with arginine; and

b) at least two internal core  $\alpha$ -helix amino acid sequence is altered to include one or more lysine residues containing at least one PEG, wherein the altered amino acid sequence is not essential for structural integrity and

wherein, an N-terminal methionine as set forth in SEQ ID NO:2 is optional.

77. (new) The G-CSF analog of claim 76 wherein the internal core helices are helices B and C.

78. (new) The G-CSF analog of claim 76 wherein the internal core helices are helices C and D.

79. (new) A G-CSF analog having hematopoietic activity comprising an internal core of helices A, B, C and D and external loops as set forth in FIG. 4 and an amino acid sequence, wherein the amino acid sequence differs from that of SEQ ID NO:2 in that

a) lysine residues at positions 17, 35 and 41 are substituted with arginine; and

b) at least three internal core  $\alpha$ -helix amino acid sequence is altered to include one or more lysine residues containing at least one PEG, wherein the altered amino acid sequence is not essential for structural integrity and

wherein, an N-terminal methionine as set forth in SEQ ID NO:2 is optional.

80. (new) The G-CSF analog of claim 79 wherein the internal core helices are helices B, C and D.

81. (new) The G-CSF analog of any one of claims 62-80, wherein the hematopoietic activity of said G-CSF analog *in vitro* is lower than the hematopoietic activity of unaltered recombinant human G-CSF *in vitro*.

82. (new) The G-CSF analog of claim 81, wherein the serum half-life of the G-CSF analog is greater than the serum half-life of unaltered recombinant human G-CSF.

83. (new) The analog of claim 81, wherein hematopoietic activity is determined by an *in vitro* tritiated thymidine assay.